

USE OF ERTS DATA FOR A MULTIDISCIPLINARY ANALYSIS OF MICHIGAN RESOURCES

E7.2-10313

CR-129562

ERTS Project No. 321

Investigator Numbers: UN-004, UN-666, UN-068, UN-671

Date: December 1, 1972

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Project Status Report:

Work on project 321 (Use of ERTS Data for a Multidisciplinary Analysis of Michigan Resources) is proceeding approximately according to planned schedules.

The program of aircraft underflights with the RB-57 and C-47 sensors has been completed. The imagery from all flights except the last has been received and is of good quality. Since the original request for duplicates of this imagery has been cut, every attempt is being made to protect the working set and maximize its availability to the various investigators and cooperators. The rolls in this working set are being dissected into individual frames which are then stored in protective envelopes at a central site. Although this kind of cataloging is relatively time consuming and expensive, it allows several investigators to be working on different portions of the roll simultaneously. This separation of the frames prevents damage from working back and forth through the rolls. Also, many of the light tables available in our research labs are not equipped with film rollers. Separation of frames increases the flexibility of use for this imagery on simple light tables with inexpensive stereoscopes. Because of these advantages, it is felt that the extra expense of separating the frames is more than justified.

The multidisciplinary and decentralized nature of the research team, coupled with limited copies of imagery, make an efficient system for communication and record keeping essential. A local information storage and retrieval system has been developed for the satellite imagery, and will be extended to cover the imagery from the underflights as well. A brief description of the structure of this system is as follows:

- (1) A record consisting of two or more punched data cards is prepared for each frame of imagery received. The first card of each record is a combined spacer and code card which contains the information from the annotation block coded in columns 53-80. In addition, column 52 of this first card contains an "S" to indicate that it is a spacer card. The rest of the first card is blank. The second card of the record is

(E72-10313) USE OF ERTS DATA FOR A
MULTIDISCIPLINARY ANALYSIS OF MICHIGAN
RESOURCES Status Report A.L. Anderson,
et al (Michigan State Univ.) 1 Dec.
1972 9 p

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a descriptor card. The first 49 columns of the descriptor card give the date, center coordinates, identification number (revolution, time, and band) for the frame. Column 50 contains a letter code for type of image (e. g., B = bulk 9x9). Column 52 contains a "D" which identifies the card as a descriptor card. Columns 53-80 are duplicated from the first card. The remaining cards in the record are comment cards which are used to document the work done on the frame. A comment card is identified by a "C" in column 52, with columns 53-80 being duplicated from the first card of the record.

- (2) The card file is copied to tape and disk files on the CDC 6500 computer at Michigan State University, which is a time-sharing machine. The file is made available to investigators and cooperators in two ways. First, they can attach the file directly from the computer via teletype terminal and list or otherwise manipulate it. Secondly, Myers provides an information retrieval service which includes sorting and listing by dates and/or coordinates.
- (3) This file is updated by addition of new frames as they are received. All investigators and cooperators are also requested to report the results of their investigations to Myers on a regular basis. He, in turn, enters these results into the computer file under the appropriate frames.


This system allows continuous monitoring of the project status, and should greatly facilitate the preparation of future reports. A teletype listing of the file as of December 1, 1972 is attached to this report. The margin for the listing has been shifted left to column 50, since inclusion of the search codes on the right would only confuse the reader and detract from the appearance of the listing.

Poor visibility has been and continues to be the major obstacle to gathering data ERTS passes over Michigan. The only clear imagery of the Lower Michigan Test Site was collected on the August 25th pass (E-1033-15580). This frame provides the only opportunity to study Michigan's agricultural crops from ERTS-1 in 1972. Since the computer work is to be a combined effort for all resources, it too must be concentrated on this frame. Opportunities for interpretation of Michigan's forest and water resources are more frequent, since portions of the Upper Peninsula have been clear on several ERTS passes. However, it is apparent at this point that lack of complete imagery is likely to preclude preparation of a forest map for the entire state. The frames for which precision data and composites have been ordered are indicated on the computer listing. These are the frames which we feel contain information of direct utility in the project. None of this precision data has yet been received, and delays in receipt thereof could cause corresponding

delays in the completion of the project. A request for 7-track bulk data tapes for frame (E-1033-15580) has been made for computer analysis at Willow Run Laboratories. Selection of training sets for this analysis is currently in progress.

The next report will contain a detailed scheduling of work, reports, and publications for the remainder of the project period.

Respectfully submitted,


Axel L. Andersen
Project Coordinator

08/25/72 CENTER N43-04/W085-18 E-1033-15580-6 B
LONGITUDE OF CENTER WRONGLY LISTED AS 000-00. ORDER PRECISION 7 + 457.

11/21/72 -- GENERAL NOTES ON INTER-
PRETATION OF LANSING AREA. APPEARANCE OF
FEATURES IN THIS BAND IS VERY SIMILAR TO
THAT IN BAND 6. A COMPOSITE OF EITHER BANDS
5 AND 6 OR BANDS 5 AND 7 WOULD APPEAR TO
OFFER GOOD POTENTIAL FOR INTERPRETING AND
DISTINGUISHING FOREST VEGETATION, WATER
BODIES, EXPRESSWAY NETWORKS, AND AGRICULT-
URAL FIELD PATTERNS. THE INTERPRETATIONS
OF THE LANSING AREA NOTED FOR THIS DATE
WERE DONE WITH A BINOCULAR MICROSCOPE ON
A LIGHT TABLE. EXPERIMENTATION WITH SEVERAL
MAGNIFICATIONS INDICATES THAT NOTHING IS
GAINED BY USING MAGNIFICATIONS GREATER THAN
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08/11/72 CENTER N47-06/W088-09 E-1036-16140-4	B
ORDER PRECISION 4 + 457.	
08/28/72 CENTER N47-06/W088-09 E-1036-16140-5	B
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08/28/72 CENTER N47-06/W088-09 E-1036-16140-6	B
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08/28/72 CENTER N47-06/W088-09 E-1036-16140-7	B
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08/28/72 CENTER N45-40/W088-45 E-1036-16143-4	B
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Date: April 10, 1973

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April 23, 1973

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The document has been sent to Repro for microfiche production.

Sincerely,

John H. Ashley
Phone: 703-321-8517

E.E.B.
E. E. Baker
Deputy General Manager

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CASE FILE

Details of Illustration
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CASE FILE

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